Landsat H (8) Long-Term Acquisition Plan

Samuel N. Goward – UMD

Darrel L. Williams – NASA/GSFC

Andrew Macatee - UMD

L7 – LTAP

- 1993 Beginning for 1998 Launch
  - Finished 1999
- Validation 2000-2002
  - SLC failure
- Validation Lessons Learned
  - LTAP-5, LTAP-7, LTAP-8

Validation Outcomes Summary

Seasonality
- Good global coverage on quarterly basis
- Regional coverage needs adjustment
  - Excessive deserts and winter high latitudes
  - Excessive tropical cloud cover
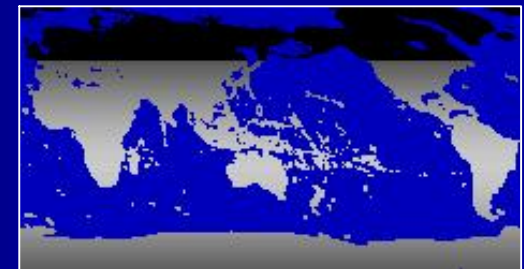 - Not enough boreal forest growing season
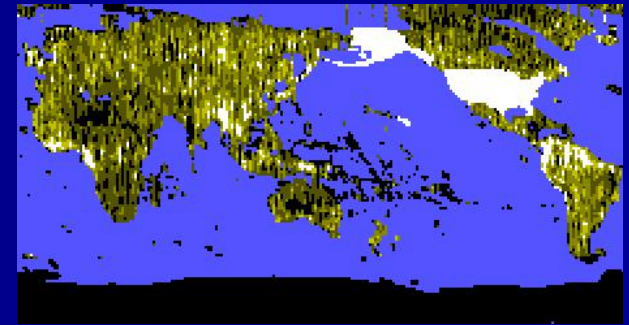
Cloud Avoidance

- 25% reduced cloud contamination in archive imagery
- ACCA within 10%, 95% of the time
- NOAA NCEP predicts and ACCA agree best
  at high (>80%) and low (<20%) cloud cover
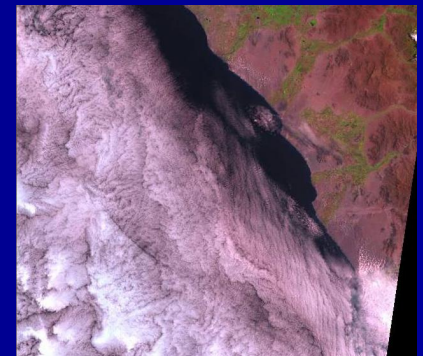
Radiometry

- Problems at land/water margins (e.g. coastal regions)
- Change solar zenith angle threshold to 75º from

Potential LTAP Enhancements

- Improve LTAP coverage
  - Reduced desert and winter acquisitions
  - Focused boreal and tropical forest acquisitions
  - Consideration of image composite approaches
  - Conversion of niches to campaigns
- Incorporate continuous variable seasonality (NDVI)
  - Better use of LTAP decision making
- Include land mask for ACCA assessment, possibly for cloud predict application
- Consider Low-gain-only operations
  - Gain changes more of a problem than a solution

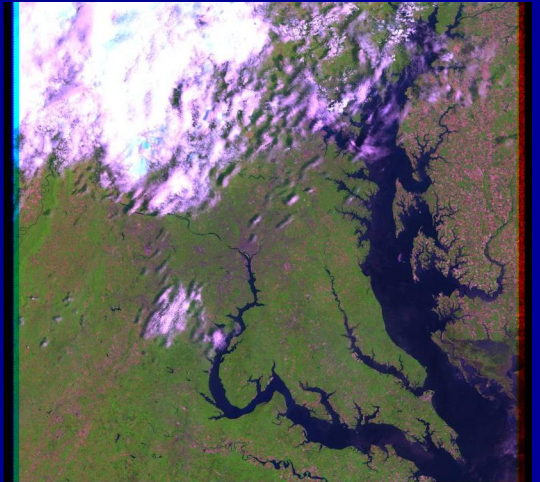# Cloud Contamination
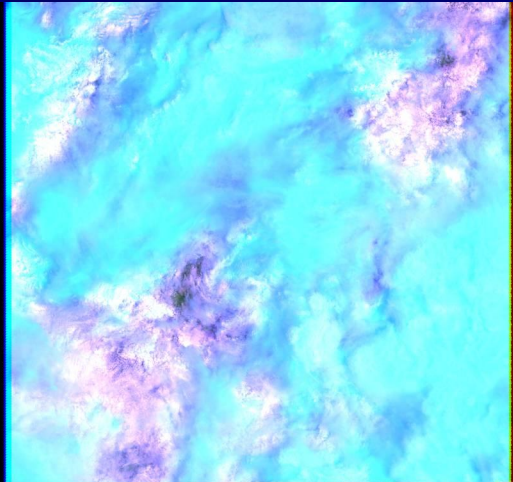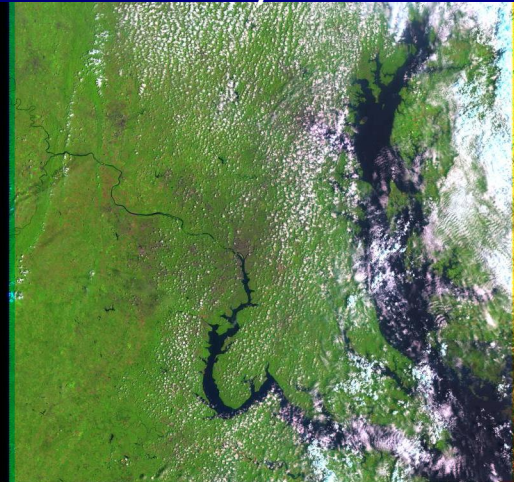## (L7 16-Day Temporal Repeat – Washington DC region, 2000)
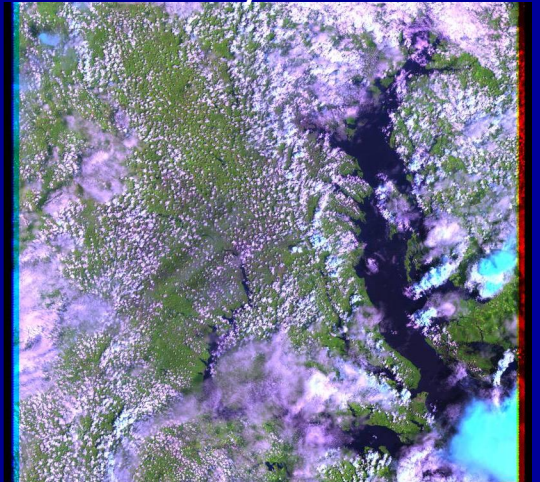
May 11
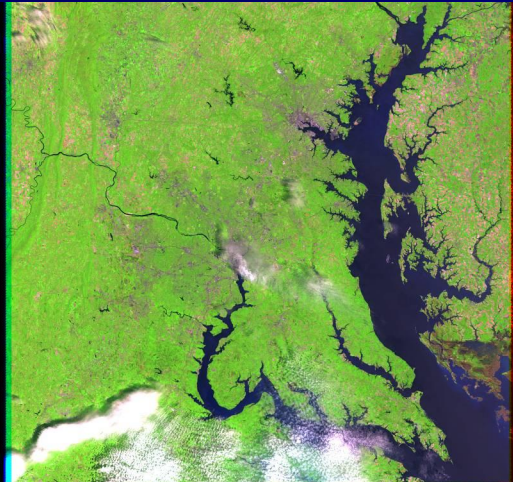
May 27

June 12

June 28

July 14

July 30

Cloud Contamination
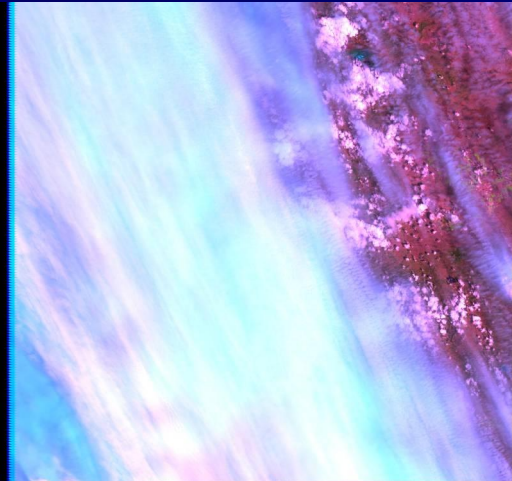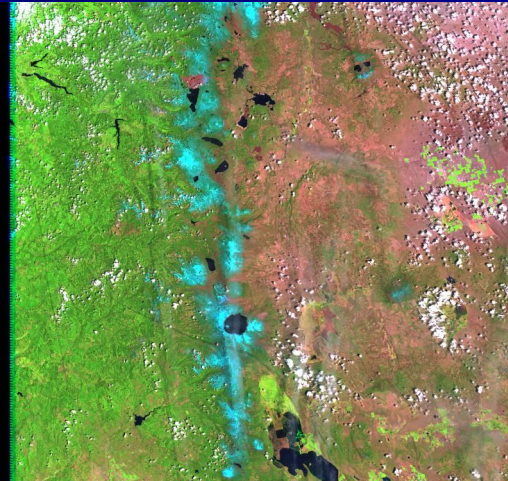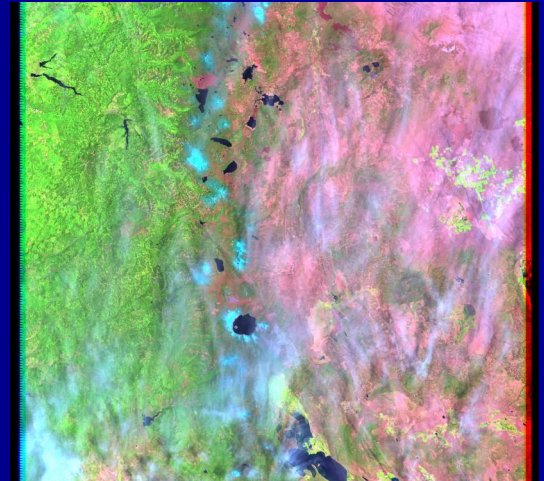## (L7 16-Day Temporal Repeat – Oregon region, 2000)

May 19   June 04   June 20

July 06   July 22   Aug 07